

Name: \_\_\_\_\_

## Auto Collision Technology

### Directions:

Evaluate the student by checking the appropriate number to indicate the degree of competency. The rating for each task should reflect employability readiness rather than the grades given in class.

### Rating Scale (0-6):

- 0 No Exposure** – no experience/knowledge in this area; program/course did not provide instruction in this area
- 1 Unsuccessful Attempt** – unable to meet knowledge or performance criteria and/or required significant assistance
- 2 Partial Demonstration** – met some of the knowledge or performance criteria with or without minor assistance
- 3 Knowledge Demonstrated** – met knowledge criteria without assistance at least once
- 4 Performance Demonstrated** – met performance criteria without assistance at least once
- 5 Repetitive Demonstration** – met performance and/or knowledge criteria without assistance on multiple occasions
- 6 Mastered** – successfully applied knowledge or skills in this area to solve related problems independently

NOTE: The NATEF task crosswalk references the 2000 program certification standards.

0	1	2	3	4	5	6	A. Identify automobile collision-related systems and associated career opportunities	NATEF Task(s)
							1. Identify opportunities in the auto collision field	None
							2. Identify the basic construction of the auto body	None
							Other:	

0	1	2	3	4	5	6	B. Measure and mix auto collision materials/supplies using applied mathematics.	NATEF Task(s)
							1. Read a rule, frictional-inch, and metric	None
							2. Solve problems involving volume and ratios	None
							Other:	

0	1	2	3	4	5	6	C. Use and maintain tools and equipment consistent with industry and safety standards	NATEF Task(s)
							1. Demonstrate safe use and maintenance of general hand tools	None
							2. Demonstrate safe use and maintenance of auto collision hand tools	None
							3. Demonstrate safe use and maintenance of electric and pneumatic hand tools	None
							4. Demonstrate safe use and maintenance of electric, pneumatic, and hydraulic equipment	None
							5. Describe proper lifting and jacking techniques	None
							Other:	

0	1	2	3	4	5	6	D. Appreciate and apply all personal and workforce safety procedures	NATEF Task(s)
							1. Identify government agencies regulating the auto collision industry	V-A-1; V-A-2
							2. Identify general safety rules	None
							3. Use protective clothing and equipment	V-A-1 thru 6

								4. Identify the proper use of fire protection equipment	None
								5. Use chemicals safely	None
								6. Identify environmental effects of chemicals	None
								7. Identify proper chemical disposal techniques	None
								8. Identify information on MSD sheets	None
								9. Identify toxic substances	None
								Other:	

0	1	2	3	4	5	6	<b>E. Write an industry-recognized damage report</b>	<b>NATEF Task(s)</b>
							1. Diagnose and analyze damage	II-A-1; II-B-1
							2. Use collision manuals	None
							3. Write a damage report in logical sequence	None
							Other:	

#### WELDING

0	1	2	3	4	5	6	<b>F. Weld and cut materials consistent with industry and safety standards</b>	<b>NATEF Task(s)</b>
							1. Identify auto collision welding processes	I-D-1; II-E-1
							2. Use safety procedures in welding and cutting	I-D-1 thru 18; II-E-1 thru 19
							3. Set up equipment for MIG welding	I-D-3 thru 5; I-D-7 and 8; I-D-16 and 17; II-E-3 thru 10; II-E-17 and 18
							4. Prepare metal for MIG welds	I-D-11; II-E-11
							5. Construct MIG welds	I-D-12 thru 14; II-E-12 thru 15
							6. Perform destructive tests	I-D-15; II-E-16
							7. Weld high strength steel	I-D-2; II-E-2
							8. Weld aluminum	I-D-1 thru 7
							9. Identify cutting processes	I-D-2; I-D-6; I-D-18; II-E-19
							10. Set up and use equipment for cutting	I-D-2; I-D-6; I-D-18; II-E-2; II-E-6; II-E-19
							Other:	

### PANEL REPAIR

0	1	2	3	4	5	6	<b>G. Repair sheet metal damage consistent with industry and safety standards</b>	<b>NATEF Task(s)</b>
							1. Analyze damage and develop repair plan	I-B-3; I-B-6; I-B-17; II-A-1; II-A-9; II-B-1; II-B-3
							2. Clean the exterior surface	II-A-7 and 8
							3. Roughout panel	I-B-16; II-B-9; II-C-3
							4. Use weld-on nail gun to repair sheet metal	II-B-9 and 10
							5. Shrink panel	I-B-14 and 15; II-C-4 and 5
							6. Prepare surface and apply body filler	II-C-1 and 2; II-C-6 and 7
							7. Finish body filler	II-C-8
							Other:	

0	1	2	3	4	5	6	<b>H. Remove, replace, and corrosion-protect body panel components</b>	<b>NATEF Task(s)</b>
							1. Remove and replace non-structural panels, welded on	I-D-2; II-A-5 and 6; II-B-2; II-B-8; II-B-12 thru 14
							2. Remove and replace structural panels, welded on	I-B-13; I-B-18; I-D-2; II-A-5; II-B-2; II-B-10
							3. Remove and replace non-structural panels, bolted on	II-B-2 thru 6; II-B-8; II-B-17
							4. Section non-structural panels, welded on	II-A-5; II-B-12
							5. Replace weld-on door panels and door intrusion barrier	I-D-2; II-A-5; II-B-2; II-B-13
							6. Replace bonded door panels	II-A-5; II-B-13; II-B-15 and 16
							7. Remove and replace bumpers, steel and aluminum	II-B-7
							8. Replace energy absorbers	II-B-7
							9. Remove and replace soft fascia covers	II-B-7; II-B-14
							10. Apply corrosion protection	I-A-9; I-B-19; II-B-11; V-B-20
							Other:	

0	1	2	3	4	5	6	<b>I. Repair plastic panels consistent with industry and safety standards</b>	<b>NATEF Task(s)</b>
							1. Identify plastic types	IV-1
							2. Clean and prepare exterior surfaces	IV-2
							3. Analyze damage and plastic repair techniques	IV-1 and 2
							4. Perform airless plastic repair	IV-3
							5. Perform repairs with chemical adhesives	IV-4
							6. Repair holes in SMC body panels	IV-5

								7. Section SMC and fiberglass body panels	IV-7
								8. Remove and replace complete SMC body panels	II-B-14; IV-8
								9. Repair and retexture plastic parts	IV-6
								10. Prepare repaired area for refinishing	IV-9; V-D-9
								11. Reconstruct fiberglass panels and identify safety procedures	IV-4 and 5; IV-7
								Other:	

#### PAINTING AND REFINISHING

0	1	2	3	4	5	6	J. Refinish auto collision components consistent with industry and safety standards	NATEF Task(s)
							1. Demonstrate safe painting practices and use of protective clothing and equipment	V-A-1 thru 6
							2. Identify and demonstrate use of refinishing equipment	V-C-1 thru 3
							3. Using a paint gun with proper technique	V-C-1 thru 3; V-D-3 and 4
							4. Identify surface preparation techniques	V-B-1 thru 4; V-B-7
							5. Demonstrate appropriate sanding techniques	V-B-5 and 6; V-B-12 and 13; V-B-18
							6. Demonstrate appropriate masking techniques	V-B-8
							7. Identify undercoats and demonstrate application procedures	V-B-9 thru 18; V-B-20
							8. Apply chip-resistant coating	V-B-19
							9. Identify topcoats and demonstrate application procedures	V-D-1 and 2; V-D-4; V-D-13; V-D-15
							10. Tint and blend color coat	V-B-21; V-D-1 and 2; V-D-4 and 5; V-D-12 and 13; V-D-15 and 16
							11. Mix and apply single-stage topcoat	V-D-2 thru 5; V-D-8
							12. Mix and apply basecoat/clearcoat	V-D-6 thru 8
							13. Mix and apply multi-stage systems	V-D-12
							14. Identify and refinish flexible plastic parts	V-D-9 thru 11
							15. Perform clearcoat repair and detailing	V-D-6; V-E-1 thru 29
							16. Identify paint defects and refinishing procedures	V-D-14; V-E-1 thru 29
							Other:	

#### EXTERIOR AND INTERIOR TRIM

0	1	2	3	4	5	6	K. Identify fasteners used in the auto collision industry	NATEF Task(s)
							1. Identify types of bolts and nuts, US and metric	None
							2. Identify types of screws	None

								3. Identify types of rivets	None
								4. Identify types of clips	None
								Other:	

0	1	2	3	4	5	6	<b>L. Analyze, remove, and reinstall interior safety systems and molding/trim components</b>	<b>NATEF Task(s)</b>
							1. Remove and replace belt molding and trim	II-A-2
							2. Remove and replace adhesive-held molding and trim	II-A-2
							3. Locate and drill holes for molding and trim	II-A-2
							4. Remove and replace decals and stripes	II-A-2
							5. Identify interior components and trim	II-A-3
							6. Remove and replace seats	II-A-3 and 4; III-B-21
							7. Remove and reinstall seat belt components	III-H-1-1 thru 3; III-H-2-1 thru 4
							8. Remove and reinstall carpeting	II-A-4
							9. Remove and reinstall dash assembly	II-A-4
							10. Identify, inspect, and disarm supplemental restraint systems	III-H-3-1 thru 3; III-H-3-5 and 6
							11. Diagnose supplemental restraint systems	III-H-3-2 and 3
							12. Replace supplemental restraint systems	III-H-3-3 thru 6
							Other:	

0	1	2	3	4	5	6	<b>M. Analyze, remove, and reinstall automotive glass system components</b>	<b>NATEF Task(s)</b>
							1. Identify vehicle glass and replacement procedures	I-C-1 and 2
							2. Remove and replace a reveal molding	I-C-1 and 2
							3. Remove and replace a gasket-type window or backglass	I-C-1 and 2
							4. Remove and replace glass with urethane sealants	I-C-1 and 2
							5. Remove and replace a door trim panel	II-D-1
							6. Remove and replace a lock cylinder	II-D-1; III-B-22 and 23
							7. Remove and replace a door glass	II-D-1 and 2; III-B-20
							8. Remove and replace a window regulator	II-D-1 and 2; III-B-20
							Other:	

### MECHANICAL SERVICES

0	1	2	3	4	5	6	N. Service automotive electrical systems	NATEF Task(s)
							1. Identify electrical systems components	II-A-10 and 11; III-B-4; III-B-9; III-B-27
							2. Service a battery	II-A-10 and 11; III-B-5 thru 10
							3. Use a digital multimeter (DMM)	II-A-10 and 11; III-B-1 thru 3
							4. Diagnose and repair electrical accessories	II-A-10 and 11; II-D-3 and 4; III-B-17 thru 26
							5. Inspect, adjust, and replace charging system	II-A-10 and 11; III-B-11 and 12
							Other:	

0	1	2	3	4	5	6	O. Service automotive lighting systems	NATEF Task(s)
							1. Service a taillight assembly	II-A-10 and 11; III-B-13; III-B-17
							2. Service a headlight assembly	II-A-10 and 11; III-B-13
							3. Service a retractable headlight assembly	II-A-10 and 11; III-B-15 and 16
							4. Aim headlights using mechanical aiming equipment	II-A-10 and 11; III-B-14
							Other:	

0	1	2	3	4	5	6	P. Service engine system components	NATEF Task(s)
							1. Remove and replace a radiator	II-A-10 and 11; III-E-1 and 2
							2. Remove, inspect, and replace belts	II-A-10 and 11; III-D-11; III-E-1
							3. Test antifreeze solution	II-A-10 and 11; III-E-3
							4. Service fan blades and clutches	II-A-10 and 11; III-E-4
							5. Check and service radiator and heater hoses	II-A-10 and 11; III-E-1
							6. Inspect, repair, and replace auxiliary oil cooler	II-A-10 and 11; III-E-5
							7. Inspect, repair, and replace fuel, exhaust, and emissions systems	II-A-10 and 11; III-G-1 thru 4
							Other:	

0	1	2	3	4	5	6	Q. Service automotive heating and air conditioning systems	NATEF Task(s)
							1. Identify air conditioning system components and service procedures	II-A-10 and 11; III-D-1 thru 7; III-D-14; III-D-16 and 17
							2. Replace condenser	II-A-10 and 11; III-D-2; III-D-15
							3. Remove and reinstall compressor	II-A-10 and 11; III-D-10; III-D-12
							4. Test the system for leaks	II-A-10 and 11; III-D-8 and 9
							5. Repair leaks in air conditioning systems	II-A-10 and 11; III-D-9; III-D-13
							6. Check and service air conditioning hoses	II-A-10 and 11; III-D-4 thru 9; III-D-13

								7. Evacuate and charge system using vacuum pump or charging system	II-A-10 and 11; III-D-4 thru 9
								8. Inspect, flush, and replace heater components	II-A-10 and 11; III-D-3 and 4
								Other:	

### FRAME AND UNIBODY CONSTRUCTION AND REPAIR

0	1	2	3	4	5	6	R. Analyze and estimate frame-body and unibody damage	NATEF Task(s)
							1. Identify vehicle frame construction and terminology	I-B-1 thru 6
							2. Identify types of damage	I-B-1 thru 6
							3. Use and interpret specification manuals	I-B-1 thru 6
							4. Identify characteristics and uses of high strength steel	I-B-6
							5. Analyze damage using tram and self-centering gauges	I-A-1; I-B-2; I-B-6
							6. Analyze damage using universal measuring system	I-B-5 and 6
							7. Analyze damage using dedicated measuring system	I-B-4; I-B-6
							Other:	

0	1	2	3	4	5	6	S. Repair frame-body and unibody damage	NATEF Task(s)
							1. Straighten and align structural damage	I-A-2 thru 8; I-B-7 thru 12
							2. Replace component parts	I-A-11; I-B-1
							3. Perform stress relief using shock	I-B-15
							4. Perform stress relief using heat	I-A-12; I-B-14
							5. Replace high strength steel	I-B-17 and 18
							6. Section component parts	I-A-10; I-B-18
							7. Remove and reinstall mechanical components	I-A-11; III-A-4; III-A-6 and 7; III-A-11; III-A-13 and 14; III-A-18; III-A-29
							Other:	

### STEERING AND SUSPENSION

0	1	2	3	4	5	6	T. Service steering and suspension systems	NATEF Task(s)
							1. Identify suspension systems	III-A-1; III-A-25 and 26
							2. Perform suspension quick checks	III-A-36
							3. Remove and reinstall suspension systems	III-A-1; III-A-9 thru 24; III-A-29; III-A-52
							4. Service suspension systems	III-A-32 thru 35
							5. Identify steering systems	III-A-2; III-A-6; III-A-28
							6. Inspect, repair, and replace steering components	III-A-1 and 2; III-1-9 thru 21; III-A-30 thru 36

								7. Service power steering system	III-A-3 thru 7
								8. Service brake systems	III-C-1 thru 14
								9. Inspect, diagnose, and repair causes of tire wear patterns	III-A-47 thru 49
								10. Perform four-wheel alignment	III-A-2; III-A-8 thru 16; III-A-37 thru 48; III-A-50 AND 51
								11. Remove and reinstall front drive trains	III-F-1 thru 7
								Other:	

#### DETAILING

0	1	2	3	4	5	6	U. Detail vehicles	NATEF Task(s)
							1. Apply decals and misc. exterior trim	V-F-1
							2. Demonstrate polishing techniques	V-F-2
							3. Clean exterior and glass surfaces	V-F-3
							4. Perform interior detailing	V-F-3
							5. Clean body openings	V-F-4
							6. Remove overspray	V-F-5
							Other:	

0	1	2	3	4	5	6	V. Demonstrate leadership skills in the classroom, industry, and society **	Notes:
							1. Determine an understanding of VICA, its structure, and activities	
							2. Demonstrate an understanding of one's personal values	
							3. Perform tasks related to effective personal management skills	
							4. Demonstrate interpersonal skills	
							5. Demonstrate etiquette and courtesy	
							6. Demonstrate effectiveness in oral and written communication	
							7. Develop and maintain a code of professional ethics	
							8. Maintain a good professional appearance	
							9. Perform basic tasks related to securing and terminating employment	
							10. Perform basic parliamentary procedures in a group meeting	
							Other:	

**\*\*NOTE: These competencies are addressed in the Missouri SkillsUSA-VICA Curriculum Guide lessons**